



# Cosmetics

INNOVATIVE SOLUTIONS FOR YOUR PRODUCTS OF THE SECURE FUTURE

High-quality raw materials for cosmetics





## MicroForm – Film-Forming Polymers for Personal Care

MicroForms are aqueous polymer emulsions and solutions used as film-forming agents in diverse cosmetic formulations. Due to their different chemical composition, MicroForms have varying film-forming properties when it comes to adhesion, water resistance, and flexibility of the film after application.

MicroForms cover a variety of requirements for film-forming polymers. MicroForms C 850 is a fast-drying, water-resistant, and flexible polymer with peel-off properties. MicroForms C 642 is extremely flexible, waterproof, and has very good adhesion. WorléeMicromer C 761 is also called hybrid polymer with a hard core and soft shell. This is why it dries extremely fast, is very waterproof and has a certain flexibility in addition to hardness. MicroForms C 525 is a transparent solution and is particularly suitable for dispersing pigments.

It has a certain water resistance at a high hardness. The MicroForms can also be combined to optimize the film-forming properties of a formulation. Thus, by adding MicroForms C 525 to the other MicroForms, the pigments can be better dispersed and the color intensity increased. In addition, the gloss of the film is increased. Conversely, the addition of MicroForms C 642 improves flexibility and adhesion to the skin. In order to produce very water-resistant films, MicroForms C 761 or C 850 can be added.

In alcoholic solutions or sprays, MicroForms C 525, C 642, or C 850 can be used.

Beside our range of standard products, we offer tailor-made products to find your personal solution.



## Your Benefits at a Glance

-  Liquid polymer dispersion and solutions – easy addition into your formula
-  Improves gloss and shine in decorative cosmetics
-  Styrene- and Acrylamide-free products
-  Cold processing – no heating or pre-dissolving necessary
-  Approved in e.g. Europe, USA, Japan, China
-  Nano-technology free
-  High water resistance for decorative products\*<sup>1</sup>
-  Constant quality – Made in Germany
-  GMO free
-  Suitable for vegan cosmetics
-  Soft/flexible to hard/rigid
-  Rub-off resistance
-  Adhesion to skin
-  Removable films
-  Fixation of pigments and other solids
-  Dispersing and grinding of pigments
-  Moisture barrier or moisture diffusion films





	MicroForm C 642	MicroForm C 761	MicroForm C 850	MicroForm C 525
INCI	Ammonium Acrylates Copolymer	Ammonium Acrylates Copolymer	Ammonium Acrylates Copolymer	Ammonium Acrylates Copolymer
Solids	41 ± 1%	55 ± 1%	49 ± 1%	25 ± 1%
Glas Transition Temperature	-15 °C	80°C / 27 °C	11 °C	34 °C
Minimum Film Forming Temperature	1 °C	0 °C	9 °C	1 °C
Preservatives	Sodium Dehydroacetate	Sodium Dehydroacetate	-	-
Color	White Emulsion	White Emulsion	White Emulsion	Transparent
Viscosity	≤ 200 mPas	≤ 500 mPas	≤ 2000 mPas	≤ 800 mPas
pH Value	7.5 – 8.5	7.0 – 8.0	8.0 – 9.0	8.0 – 9.0
Freeze / Thaw Stable	Yes	No	Yes	Yes

## Advantages, Properties, and Application Areas

Advantages	MicroForm C 642	MicroForm C 761	MicroForm C 850	MicroForm C 525
Water resiatnce	++	+++	+++	+
Flexibility	+++	++	++	
Gloss	++	+++	+++	+++
Adhesion	+++	++	++	+++
Fast drying	++++	+++	+++	+
Hardness		++	+	+++
Peel-off			+++	
Transparent liquid				+++
Pigment dispersing	+	+	++	+++

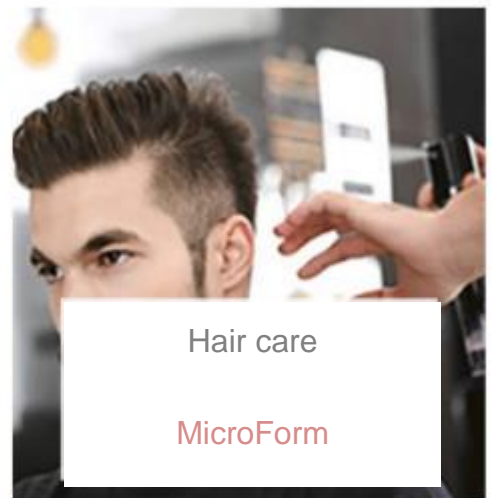
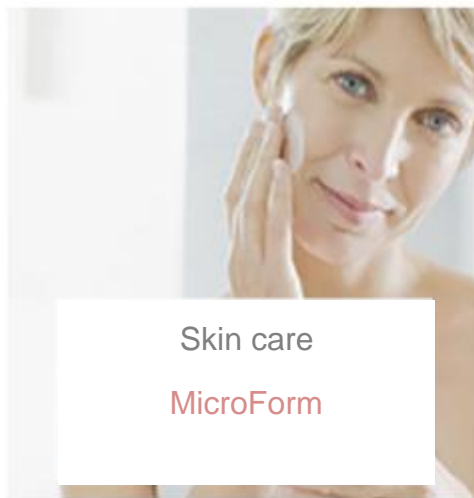
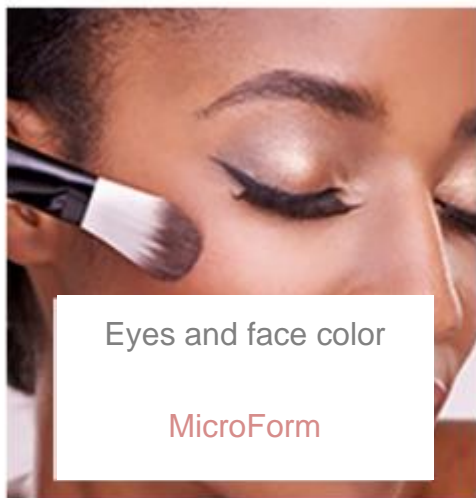
\* +good ++ very good +++excellent

Film Properties	MicroForm C 642	MicroForm C 761	MicroForm C 850	MicroForm C 525
Drying Time	Fast	Very fast	Very fast	Medium
Adhesion	Very High	High	High	High
Water resitance	High	Very High	Very High	Good
Apprance	Stretchable, very flexible, glossy	Flexible, glossy	Flexible, elastic, glossy	Hard, high-gloss

Compatibility	MicroForm C 642	MicroForm C 761	MicroForm C 850	MicroForm C 525
Shear	Yes	Yes	Yes	Yes
Salt	No	No	No	No
Alcohol	Very High	Low	Medium	Ver High
Pigments	Yes	Yes	Yes	Yes
pH Optimum use level	6.5 – 10.0	6.5 – 10.0	6.5 – 10.0	6.5 – 10.0
Max. temperature of usage	95 °C	95 °C	95 °C	95 °C

Application	MicroForm C 642	MicroForm C 761	MicroForm C 850	MicroForm C 525
Makeup	+++	+++	+++	+++
Skin care	++	++	++	++
Sun care	+++	+++	+++	++

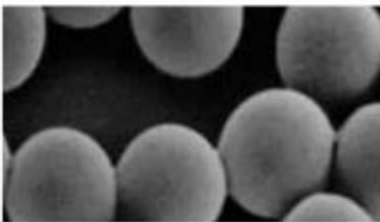
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# Applications

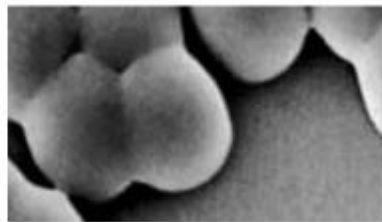
We have a wide variety of products available for color cosmetics, hair care, and skin care applications. These products include adhesion promoters, film formers, preservatives, emollient esters, and functional skin care ingredients to help boost your product performance.

## Process of Film-Forming



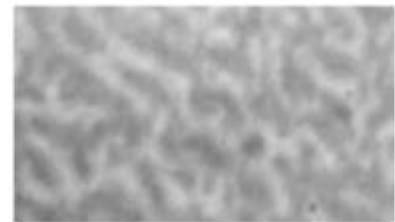
### Step 1

Polymer dispersion in water.



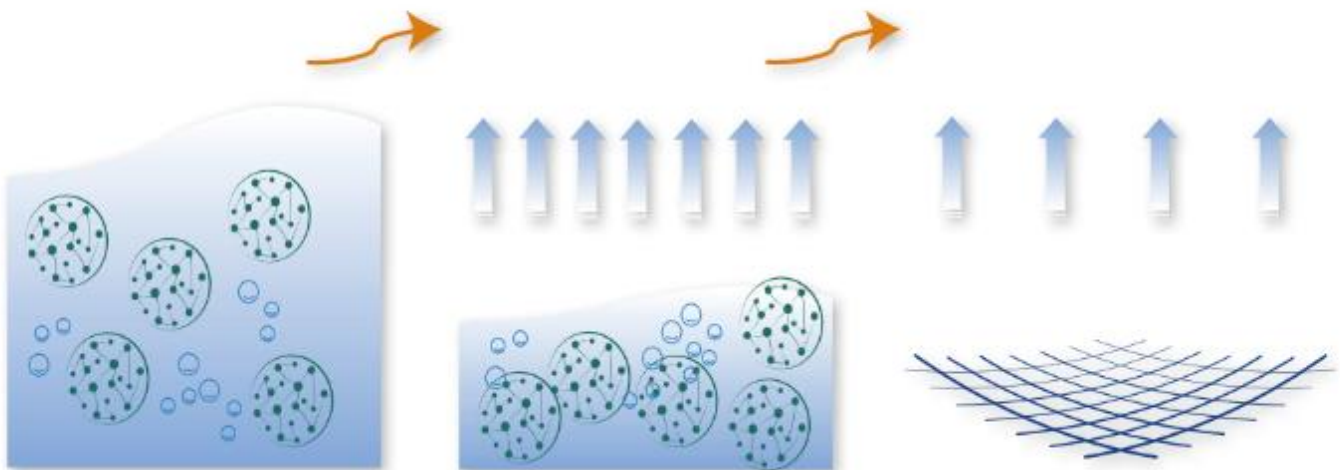
### Step 2

By evaporation of water, the polymer is concentrated. The repulsive force of the interface between the particles will be overcome.



### Step 3

At the end of the film-forming procedure, the particles flow into each other and build a uniform closed film.



### Minimum Film-Forming Temperature (MFFT)

MFFT is the lowest temperature at which a polymer or solid portion of an aqueous polymer dispersion will coalesce to form a continuous polymer film. At temperatures at and above the MFFT of the polymer, the film is formed. At temperatures below its MFFT, the polymer cannot coalesce to form a continuous film and drying will result in a white, powdery, cracked film.

### Glass Transition Temperature (Tg)

Without going too deeply into theory, the property of the glass transition temperature can be as follows: polymers with a low Tg are soft and flexible, whereas polymers with a high Tg are hard and brittle.

But this is only a point of reference, since plasticizers, oils, and other ingredients can be used to adjust the properties of hard and brittle polymers in a formulation and to make them also soft and flexible. Thus, when the formulation forms film that is too hard and brittle, either plasticizer can be used or a different polymer with a lower Tg can be selected. However, if the film is too soft and sticky, you can choose a polymer with a higher Tg.

### T < MFFT [Polymer] in °C

- ♥ polymer-film starts to break
- ♥ no adhesion
- ♥ no water resistance
- ♥ loss of gloss

### T > MFFT [Polymer] in °C

- ♥ polymer-film is closed
- ♥ high adhesion
- ♥ water resistance
- ♥ enhance gloss
- ♥ mechanical stable polymer film

## Rheology Modifier / Thickener

### Strong products for complex formulations

The texture and feel of body care products on skin and hair is important for the consumer. Due to the complexity of the formulations, rheology modifiers are often required to ensure optimum consistency and haptics of the end product.

Ve'lon Aqua Thix are liquid rheology modifier designed to thicken, suspend and stabilize particles in emulsions. They are cost-effective all-in-one polymers to create sophisticated cleansing products and they offer emulsion stability and suspending of pigments in skin and sun products and enhances pigments distribution in color cosmetics resulting in pleasant aesthetics and high coverage.

Application	INCI	Description
Aqua Thix 100	Acrylate Copolymer	Aqua Thix 100 is a rheology modifier designed to thicken, suspend and stabilize formulations. It offers emulsion stability and suspending of pigments in skin and sun care products and enhances pigment distribution in color cosmetics resulting in pleasant aesthetics and high coverage. It is a cost-effective and easy to handle product with numerous benefits.
Aqua Thix 200	Acrylate Copolymer	Aqua Thix 200 is a rheology modifier and thickener designed to suspend and stabilize particles in cleansing formulations coating low and high levels of surfactants. It is a cost-effective and easy to handle product with numerous benefits. The formulator can create sophisticated cleansing product with different textures ranging from clear formulations with suspended particles to pearlescent systems and oil-rich shower creams.
Aqua Thix 300	Acrylate Copolymer	Aqua Thix 300 is a rheology modifier and thickener to provide superior clarity and stable suspension of particles for naturally preserved low pH cleansing formulations. Aqua Thix 300 is a cost-effective all-in-one polymer designed for use in formulations with pH 4.0-9.0 and to create sophisticated cleansing products with different textures ranging from clear formulations with suspended particles to pearlescent systems and oil-rich shower creams. Ve'lon Aqua Thix 300 shows excellent compatibility with classical as well as mild and sulfat-free anionic and non-ionic surfactants.



VARENA CHEMICAL is known for its superior quality and impressive range of products and with its excellent distribution network it can provide first-class service to customers whatever their market. Customer Service and Technical Service teams are renowned for their customer focus, offering the best service even after products have left manufacturing.

The group strives to keep customers satisfied, assisting them in producing premium quality products every time they use its products.



Product innovation is important for the group's business and it's the reason for which it constantly works with customers to find solutions to problems.

Introducing new or improved products ensures that VARENA CHEMICAL continue not only to deliver what the market wants and needs, but also when it is wanted and needed.



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